



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,512	02/01/2002	Dana L. Hoggatt	7021-201	9798

7590 12/14/2004

Woodard, Emhardt, Naughton, Moriarty and McNett
Bank One Center/Tower
Suite 3700
111 Monument Circle
Indianapolis, IN 46204-5137

EXAMINER

NGUYEN, CINDY

ART UNIT	PAPER NUMBER
----------	--------------

2161

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/061,512

Applicant(s)

HOGGATT, DANA L.

Examiner

Cindy Nguyen

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 02/01/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2161

DETAILED ACTION

This is in response to application filed on 02/01/02 in which claims 1-43 are presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5, 8, 38 and 39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. No wherein in specification contain a written description of "determining a penultimate partition" and "determining a rough distribution" recited in claims 5, 8, 38 and 39. The correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Chilimbi et al. (US 6330556).

Regarding claim 1, Chilimbi discloses: a method for positioning data in a database, comprising: constructing a base graph (single affinity graph) in which a plurality of data blocks (structures, col. 7, lines 65-67, Chilimbi) in the database correspond to respective ones of a plurality of vertices (fields), and in which at least one affinity between objects corresponds to at least one edge (col. 6, lines 58 to col. 7, lines 7, Chilimbi); and

constructing a simpler graph (fig. 3), comprising: a plurality of final vertices, each corresponding to at least two of the vertices from the base graph (structures, col. 7, lines 39-55, Chilimbi); and

at least one final edge corresponding to at least one of the edges in the base graph (fields a, b, c, col. 7, lines 29-38, Chilimbi); and

selecting a simple partition for the simpler graph (structures, col. 7, lines 65-65, Chilimbi); and

determining a final partition for the data in the database from the simple partition of the simpler graph (structures, col. 7, lines 65-67, Chilimbi).

Regarding claims 3 and 37, all the limitations of these claims have been noted in the rejection of claims 1 and 35. In addition, Chilimbi discloses: wherein the simpler graph is constructed by constructing one or more intermediate graphs, each intermediate graph being a subsequent graph to one from which it is constructed and being a prior graph to a graph constructed from it (fig. 3 and col. 7, lines 8-17, Chilimbi), each intermediate graph comprising:

Art Unit: 2161

a plurality of new vertices corresponding to pairs of vertices from the previous graph (col. 7, lines 39-55, Chilimbi); and at least one new edge corresponding to at least one edge adjacent to one of the vertices in the pair of vertices corresponding to the new vertex adjacent to the at least one new edge (col. 8, lines 35-49, Chilimbi); and wherein the simpler graph is constructed from one of the one or more intermediate graphs (col. 8, lines 35-49, Chilimbi).

Regarding claims 2, 4, 24 and 36, all the limitations of these claims have been noted in the rejection of claims 1, 3, 23 and 35. In addition, Chilimbi discloses: wherein the base graph and simpler graph are weighted graphs, and wherein the weight of a given edge corresponds to the affinities of the data blocks corresponding to the vertices adjacent the given edge (col. 10, lines 15-23, Chilimbi).

Regarding claims 5 and 38, all the limitations of these claims have been noted in the rejection of claims 1 and 35. In addition, Chilimbi discloses: wherein the determining a final partition for the data in the database from the simple partition of the simpler graph comprises: determining a penultimate partition for the base graph wherein each group comprises every parent vertex to any daughter vertex in the simpler graph if the group comprises at least one parent vertex to that daughter vertex (col. 14, lines 14-25, Chilimbi); and determining a rough distribution of the data blocks in which a given data block is positioned on a page with each data block with which the given data block shares an adjacent edge, unless that edge is cut in the penultimate partition (col. 17, lines 28-37, Chilimbi); and refining the rough distribution by moving at least one data block from the page on which it was positioned during the determining a rough distribution of the data blocks (col. 18, lines 19-25, Chilimbi).

Art Unit: 2161

As per claim 8, all the limitations of this claim have been noted in the rejection of claims 1, 2 and 5. It is therefore rejected as set forth above.

Regarding claims 6 and 9, all the limitations of these claims have been noted in the rejection of claims 1 and 8. In addition, Chilimbi discloses: wherein every data block of data in the database corresponds to a vertex in the base graph (col. 6, lines 58 to col. 7, lines 8, Chilimbi).

Regarding claims 7 and 10, all the limitations of these claims have been noted in the rejection of claims 1 and 8. In addition, Chilimbi discloses: wherein fewer than every data block of data in the database corresponds to a vertex in the base graph (col. 6, lines 58 to col. 7, lines 8, Chilimbi).

Regarding claim 11, Chilimbi discloses: a method of positioning a first new data block of data on a page, comprising:

buffering the first new data block in server memory (col. 14, lines 55-66, Chilimbi); and

selecting a page containing data blocks having a high collective affinity for the first new data block (col. 17, lines 28-36, Chilimbi); and

determining whether the collective affinity of the data blocks on the selected page for the first new data block exceeds a preselected value (col. 16, lines 4-14, Chilimbi); and

positioning the first new data block on the selected page if the collective affinity of the data blocks on the selected page exceed the preselected value (col. 14, lines 55-66, Chilimbi); and

Art Unit: 2161

positioning the first new data block on a new page if the collective affinity of the data blocks on the selected page do not exceed the preselected value (col. 16, lines 66 to col. 17, lines 8, Chilimbi).

As per claims 40 and 42, all the limitations of these claims have been noted in the rejection of claims 11 and 39 above, respectively. It is therefore rejected as set forth above.

Regarding claims 12, 41 and 43, all the limitations of these claims have been noted in the rejection of claims 11, 40 and 42 above, respectively. In addition, Chilimbi discloses: wherein additional new data blocks created at the same time as the first new data block are positioned on the same page as the first new data block (col. 17, lines 39-49, Chilimbi).

As per claim 13, all the limitations of this claim have been noted in the rejection of claim 1 and 3 above. It is therefore rejected as set forth above.

As per claim 25, all the limitations of this claim have been noted in the rejection of claim 1 and 5 above. It is therefore rejected as set forth above.

Regarding claims 14 and 26, all the limitations of these claims have been noted in the rejection of claims 13 and 25. In addition, Chilimbi discloses: wherein the information comprises extents, relationships, and collections defined by a schema of the database (col. 6, lines 58 to col. 7, line 7 and fig. 3, Chilimbi).

Art Unit: 2161

Regarding claims 15 and 27, all the limitations of these claims have been noted in the rejection of claims 13 and 25. In addition, Chilimbi discloses: wherein the information is defined by a traversal algorithm (col. 16, lines 32-44, Chilimbi).

Regarding claim 16, Chilimbi discloses: a method for assigning a weight to an edge of a weighted graph corresponding to data blocks in a database, the method comprising using statistical information regarding the patterns of past accesses of data blocks (col. 6, lines 58 to col. 7, lines 27, Chilimbi).

As per claim 28, all the limitations of this claim have been noted in the rejection of claim 1 and 16 above. It is therefore rejected as set forth above.

Regarding claims 17 and 29, all the limitations of these claims have been noted in the rejection of claims 16 and 28. In addition, Chilimbi discloses: wherein the statistical information is used to select an access type from a pre-defined set, the access type defining the weight (col. 17, lines 39-55, Chilimbi).

As per claim 18, all the limitations of this claim have been noted in the rejection of claim 16 above. In addition Chilimbi discloses: the method comprising using information provided by an application developer (col. 16, lines 43-65, Chilimbi).

As per claim 30, all the limitations of this claim have been noted in the rejection of claim 1 and 18 above. It is therefore rejected as set forth above.

Art Unit: 2161

Regarding claims 19 and 31, all the limitations of these claims have been noted in the rejection of claims 18 and 30. In addition, Chilimbi discloses: further comprising: providing a schema of the database defining a pre-assigned access type for at least one collection (col. 15, lines 11-30, Chilimbi); and wherein the using information provided by an application developer comprises assigning the at least one weight to the at least one edge corresponding to at least one relationship between data blocks comprising the collection, the at least one relationship being defined by the pre-assigned access type (col. 10, lines 15-23, Chilimbi).

Regarding claims 20 and 32, all the limitations of these claims have been noted in the rejection of claims 18 and 30. In addition, Chilimbi discloses: wherein the using information provided by an application developer comprises: selecting at least one derived access type from a predefined set for each of the collections of the schema of the database (col. 17, lines 37-63, Chilimbi); and assigning at least one weight to at least one edge corresponding to at least one relationship between data blocks comprising the collection, the at least one relationship being defined by the derived access type (col. 17, lines 28-36, Chilimbi).

As per claim 22, all the limitations of this claim have been noted in the rejection of claim 19 and 20 above. It is therefore rejected as set forth above.

As per claim 34, all the limitations of this claim have been noted in the rejection of claim 1, 2 and 5 above. It is therefore rejected as set forth above.

Regarding claims 21, 23, 33 and 35, all the limitations of these claims have been noted in the rejection of claims 20, 22, 32 and 34. In addition, Chilimbi discloses: wherein the selecting

Art Unit: 2161

at least one derived access type comprises: collecting statistical data on access patterns of a plurality of data blocks (col. 15, lines 31-38, Chilimbi); selecting from the predefined set the derived access type most closely matching the statistical data (col. 15, lines 51 to col. 16, lines 3, Chilimbi).


As per claim 39, all the limitations of this claim have been noted in the rejection of claim 1, 2, 5, 16 and 22 above. It is therefore rejected as set forth above.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 571-272-4025. The examiner can normally be reached on M-F: 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.


Cindy Nguyen
December 2, 2004


FRANTZ COBY
PRIMARY EXAMINER